REMARKS

The present amendment is prepared in accordance with the requirements of 37 C.F.R. § 1.121. A complete listing of all the claims in the application is shown above showing the status of each claim. For current amendments, inserted material is underlined and deleted material has a line there through.

Applicants appreciate the thoroughness with which the Examiner has examined the above-identified application. Reconsideration is requested in view of the amendments above and the remarks below.

Claims 1, 4, 9, 12 and 17 have been amended.

Claims 5, 16, 19, 20 and 24-29 have been canceled.

Claims 30-35 have been added.

No new matter has been added.

Election/Restrictions

Applicants affirm the election of claims 1-23 drawn to a process. Since the restriction requirement has been made final, applicants have canceled non-elected claims 24-29.

No new matter has been added.

Claim Rejections - 35 USC § 112

The Examiner has rejected claims 1-8 under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner points out that in claim 1, line 13, "said insulating layers" lacks antecedent basis. Applicants have

amended claim 1 to clarify a single insulating layer and submit that such error was merely a typographical error.

No new matter was added.

Claim Rejections - 35 USC § 102

The Examiner has rejected claims 1-4, 6, 7, 9-15, 21-23 under 35 USC 102(e) as being anticipated by Lu et al. (2004/0018748).

Lu et al. discloses methods of forming a dielectric insulating layer that is subjected to a surface treatment for increasing the hydrophilicity of such dielectric insulating layer. (Lu, paragraph [0016].) In one embodiment, the surface of the dielectric insulating layer is treated with a gas including at least one of NH_3, N_2, N_2O, O_2, CO_2, and H_2 gases in the presence of an inert gas, such as, argon or helium. (Lu, paragraph [0020].) In another embodiment, multiple plasma surface treatments may be carried out for increasing the hydrophilicity of the dielectric insulating layer surface. For example, a hydrogen plasma treatment is first carried out followed by an ammonia (NH_3) gas treatment. (Lu, paragraph [0022].) In still another embodiment, the hydrophilicity increasing surface treatment method is a wet process whereby the dielectric insulating layer surface is exposed to a hydrophilicity increasing solution. (Lu, paragraph [0023].) For example, the wet hydrophilicity increasing surface treatment includes dipping or spraying a semiconductor wafer in or with the hydrophilicity increasing solution. The hydrophilicity increasing solution of Lu et al. includes a surfactant present in solution from about 0.1 weight percent to about 10 weight percent. (Lu, paragraph [0023].) Lu et al. continues that following exposure of the dielectric insulating layer to the hydrophilicity increasing solution, the surface area

is subjected to a baking process for forming a stronger bond between the dielectric insulating layer and the surface treatments. (Lu, paragraph [0024].)

Amended independent claim 1 is directed to a method of improving adhesion between an insulating layer and a capping layer in a process for making electronic components. The method includes an integrated circuit structure an insulating layer. An exposed surface of the insulating layer is then contacted with a gas selected from silane, disilane, dichlorosilane, germane or combinations thereof for adsorption of the gas onto this exposed insulating layer surface to form a treated surface area thereof while maintaining an original thickness of the insulating layer. A capping layer is deposited layer directly over the treated surface area. The process for making the IC then continues, whereby the treated surface area improves adhesion between the insulating layer and the capping layer to prevent delamination therebetween during this continued processing. Support for the amendments to claim 1 can be found in objected to claim 5.

Independent claims 9, 30 and 33 are directed to methods of forming a semiconductor device. The methods include providing a substrate layer, depositing an insulating layer over the substrate layer, heating these layers, and then flowing a treatment gas over a surface of the heated insulating layer. The treatment gas contacts the heated insulating layer for adsorption thereon to form a treated surface area while maintaining an original thickness of the insulating layer. A capping layer is then deposited directly over the insulating layer, whereby the treated surface area improves adhesion between the insulating and capping layers to prevent delamination therebetween during subsequent processing steps. According to claim 9, the treatment gas may be silane, disilane, dichlorosilane, germane or combinations

thereof. According to claim 30, the method may further include oxidizing the treated surface area of the insulating layer prior to depositing the capping layer, while claim 33 recites that the treated surface area may be carbonized prior to depositing the capping layer. Support for the amendments to claim 9 can be found in objected to claim 16. Support for new claim 30 can be found in originally filed claim 9 and objected to claim 19, while support for new claim 33 can be found in originally filed claim 9 and objected to claim 20.

Applicants submit that the present invention is not anticipated by Lu et al. Anticipation is but the ultimate or epitome of obviousness. To constitute anticipation, all material elements of a claim must be found in one prior art source. In re Marshall, 577 F.2d 301, 198 USPQ 344 (CCPA 1978).

Lu et al.. does not disclose treating an insulating layer surface with a gas selected from silane, disilane, dichlorosilane, germane or combinations thereof for adsorption of the gas thereon, as is currently recited in independent claims 1 and 9. Lu et al. also does not disclose methods of forming semiconductor devices whereby a treated surface area of an insulating layer having adsorbed gases thereon is either oxidized (as is recited in claim 30) or carbonized (as is recited in claim 33) prior to depositing a capping layer thereover. Lu et al.. is limited to methods of forming dielectric insulating layers that are treated with a gas including at least one of NH_3, N_2, N_2O, O_2, CO_2, and H_2 gases in the presence of an inert gas, such as, argon or helium, for increasing the hydrophilicity thereof, followed by baking process to form a stronger bond between the insulating layer and the surface treatments. (Lu, paragraphs [0016], [0020], [0022], [0023] and [0024].)

Accordingly, it is submitted that the claims of the instant invention include limitations not disclosed nor contemplated by Lu et al. such that Lu et al. does not anticipate nor render obvious the instant invention.

It is for these reasons that applicant respectfully requests reconsideration and issuance of a Notice of Allowance. Upon receipt and review of the foregoing amendment, applicant's undersigned attorney hereby respectfully requests an interview with the Examiner for purposes of placing the present application in a better condition for allowance or appeal.

Respectfully submitted,

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